

CLAIMS

We claim:

1. A pre-fiber gel composition, comprising:
 - at least one amide-based polymer; and
 - 5 at least one lactam gelling agent, wherein the gel composition has sufficient viscosity and sufficient cohesiveness upon the mixing of the at least one amide-based polymer and the at least one lactam gelling agent that the composition can be spun into a fiber.
2. The pre-fiber composition of claim 1, wherein the at least one amide-based polymer comprises a nylon compound.
- 10 3. The pre-fiber composition of claim 2, wherein the nylon compound comprises nylon-6.
4. The pre-fiber composition of claim 1, wherein the at least one lactam gelling agent comprises caprolactam.
5. The pre-fiber composition of claim 1, wherein the at least one lactam gelling agent comprises less than 50 weight percent of the composition.
- 15 6. The pre-fiber composition of claim 5, wherein the at least one lactam gelling agent comprises less than 40 weight percent of the composition.
7. The pre-fiber composition of claim 6, wherein the at least one lactam gelling agent comprises less than 30 weight percent of the composition.
- 20 8. The pre-fiber composition of claim 7, wherein the at least one lactam gelling agent comprises less than 20 weight percent of the composition.
9. The pre-fiber composition of claim 8, wherein the at least one lactam gelling agent comprises less than 10 weight percent of the composition.
10. The pre-fiber composition of claim 9, wherein the at least one lactam gelling agent comprises less than 5 weight percent of the composition.
- 25 11. A spun fiber comprising the gel composition of claim 1.
12. A carpet product comprising the spun fiber of claim 11.

13. A method of producing a pre-fiber gel composition, comprising:
 - providing at least one amide-based compound;
 - providing at least one lactam gelling agent; and
 - mixing the at least one amide-based polymer and the at least one lactam gelling agent such that there is sufficient viscosity and sufficient cohesiveness in the composition so that it can be spun into a fiber.
14. The method of claim 13, wherein the at least one amide-based polymer comprises a nylon compound.
15. The method of claim 14, wherein the nylon compound comprises nylon-6.
16. The method of claim 13, wherein the at least one lactam gelling agent comprises caprolactam.
17. The method of claim 13, wherein the at least one lactam gelling agent comprises less than 50 weight percent of the composition.
18. The method of claim 17, wherein the at least one lactam gelling agent comprises less than 40 weight percent of the composition.
19. The method of claim 18, wherein the at least one lactam gelling agent comprises less than 30 weight percent of the composition.
20. The method of claim 19, wherein the at least one lactam gelling agent comprises less than 20 weight percent of the composition.
21. The method of claim 20, wherein the at least one lactam gelling agent comprises less than 10 weight percent of the composition.
22. The method of claim 21, wherein the at least one lactam gelling agent comprises less than 5 weight percent of the composition.
23. The method of claim 13, wherein mixing comprises blending.
24. The method of claim 13, wherein mixing comprises extruding.
25. The method of claim 13, further comprising heating the composition.

26. The method of claim 13, further comprising removing at least part of the at least one lactam gelling agent after the mixing step.
27. A spun fiber formed using the method of claim 13.
28. A carpet product comprising the spun fiber of claim 23.